

WHAT IS CLAIMED IS:

- 1 1. A probe for detecting magnetic resonance signals emitted from a
2 region of interest in an object comprising:
 - (a) at least first and second electrodes positionable on or within the object
in proximity to the region of interest, and
 - (b) feed wires coupling the electrodes to a signal detector,
wherein the electrodes and feed wires cooperatively function with matter
within the region of interest to form a signal detecting coil.
- 1 2. The probe as defined by claim 1 wherein the first and second
2 electrodes are spaced apart with matter within the region of interest therebetween.
- 1 3. The probe as defined by claim 2 wherein the matter comprises tissue.
- 1 4. The probe as defined by claim 2 wherein the matter comprises fluid.
- 1 5. The probe as defined by claim 2 wherein the number of electrodes
2 exceeds two.
- 1 6. The probe as defined by claim 5 wherein the electrodes are carried by a
2 catheter.
- 1 7. The probe as defined by claim 6 wherein electrodes are rings around
2 the circumference of the catheter.
- 1 8. The probe as defined by claim 6 wherein the electrodes are extendable
2 from and retractable within the catheter.
- 1 9. The probe as defined by claim 2 wherein the electrodes are carried by a
2 catheter.
- 1 10. The probe as defined by claim 9 wherein the electrodes are rings
2 around the circumference of the catheter.
- 1 11. The probe as defined by claim 9 wherein the electrodes are extendable
2 from and retractable within the catheter.

- (a) placing the object in a static magnetic field,
- (b) applying RF excitation pulses to the region of interest, and
- (c) detecting magnetic resonance signals from the region of interest with

6 an array of at least two spaced electrodes in proximity to the region of interest.

1 15. The method as defined by claim 13 wherein the electrodes comprise
2 needles.

1 16. The method as defined by claim 13 wherein the electrodes are carried
2 by a catheter.

1 . 17. The method as defined by claim 16 wherein the electrodes comprise
2 rings around the circumference of the catheter.

1 18. The method as defined by claim 16 wherein the electrodes are
2 extendable from and retractable within the catheter.